

Sky-Watcher USA's hot new scope tested

Combine 5 inches of light-gathering power with easy portability, and you have a winner of a scope. **by Raymond Shubinski**

You can't judge a telescope by its sparkly tube, but the new Sky-Watcher USA Maksutov-Cassegrain 127mm sure looks nice right out of the box. I'm always excited to try out new equipment, and I'm especially fond of small portable scopes. The reason is simple: I use them more. So when I had a chance to try out this new 5-inch scope, I jumped at it.

Design

The telescope is a compound Maksutov-Cassegrain hybrid system. Most observers are familiar with the Schmidt-Cassegrain design, like the classic 8-inch Celestron telescope. These scopes are short and compact because the light traveling through them reflects several times, which results in a "folded" light path.

In a Schmidt-Cassegrain, light first passes through a

The Mak-Cass 127mm incorporates a 2" focuser. The company includes a 1¼" adapter.

Schmidt corrector plate at the front of the telescope, then to a spherical mirror. In a Mak-Cass design, the front plate has a slight negative curvature, but the mirror is still spherical. The corrector reduces several problems, including chromatic and spherical aberration.

The first manifests itself as color fringes on bright objects, and the second is a smearing of the focus because a spherical mirror doesn't focus all the light it collects at one point. If done right, the corrector yields a short, portable telescope that delivers sharp images across the field of view. And if my observations are any indication, the Sky-Watcher USA Maksutov-Cassegrain 127mm is indeed done right.

Details

Sky-Watcher USA is based in Torrance, California. I've been aware of its telescopes for many years and have appreciated the quality the company puts into its products. As I unpacked this telescope I first noticed the beautiful deep-blue finish of the tube. It really does sparkle.

Included components are a 6x30 finder scope, a 2" star diagonal, and 28mm eyepiece. An adapter ring handles 1¼" eyepieces. A standard dovetail plate is part of the tube assembly. Compared to 5-inch Schmidt-Cassegrain telescopes, this Mak-Cass is a bit longer and just a little bit heavier. This gives the scope a nice, substantial feel.

The telescope came without a mount, but it was not a problem for me; I have a number to choose from. For this test, I put the scope on a German equatorial mount and an alt-azimuth one. Both handled the 5-inch scope without a problem.



The telescope has a 1,500-millimeter focal length, which creates an f/12 optical system.

Under the sky

My first effort at observing with the Sky-Watcher USA 127mm was an early evening scan of the Moon. Our satellite was in a waxing gibbous phase and brighter than I like, but I was struck by the overall crispness of the details I could see through the 28mm eyepiece.

I always enjoy observing double stars. Typically I've used refractors for these endeavors. Double stars present a double challenge for the equipment: Can the scope resolve both components, and are the colors true? Naturally, I wanted to see how the Mak-Cass did with this type of object.

The first target was an easy mark, beautiful Albireo (Beta [β] Cygni). As expected, the 28mm eyepiece split this famous double with ease. Because the telescope has a focal length of 1,500 millimeters, this eyepiece provides a magnification of 54x, plenty of power for the job.

Through the scope, Albireo's colors were startling. The primary appeared distinctly yellow, while the secondary was a wonderful vivid blue. Also, the sky between the two stars was nice and dark. I watched as Albireo drifted toward the edge of the field of view, looking for any distortion. Even when the stars were on the very rim of the field, I saw none.

Next, I turned to Almach (Gamma [γ] Andromedae). The 1881 edition of *A Cycle of Celestial Objects* by William Smyth and George Chambers says this star's two components are orange and emerald green.



Sky-Watcher USA's Maksutov-Cassegrain 127mm offers 5 inches of aperture in an easily portable package.

Through the Sky-Watcher USA scope, the brighter of the two appeared pale yellow while the fainter star looked white with just a hint of blue. This compares well with observations of Almach that I have made with large refractors. I upped the magnification to 88x by inserting a 17mm Plössl. The two stars remained sharp, and the colors held up well.

Although Lyra was low in the west, I turned the scope on the famous Double-Double, Epsilon (ε) Lyrae. Splitting the two main stars was easy. I had to bump up the power, however, to split the two into four. I think the cause lay in the altitude of Lyra and, therefore, the atmosphere.

My next quarry was a favorite: the Andromeda Galaxy (M31). On the night I observed it, the sky was steady and transparent. I once again began with the 28mm. This eyepiece provides about a 1° field of view. M31 appeared as an extended oval of distinct nebulosity. The core of the galaxy shone brightly.

As I panned back and forth, I could trace the galactic arms for another degree or so on either side of the nucleus. The contrast between the galaxy and the dark background sky was really great. Because of the outstanding contrast, I had no problem picking out the big spiral's two companion galaxies, M32 and NGC 205.

After a stretch of cloudy nights, I finally had a chance to observe in the early morning hours. My main goal was the beautiful October grouping of Venus, Jupiter, and Mars. Of course, as I started to observe, some winter sky objects sidetracked me.

Raymond Shubinski has decades of observing experience, the last of which has come from under the (usually) clear skies outside Las Vegas.

I quickly surveyed the Orion Nebula (M42). Even against the lights of Las Vegas, I clearly could see the extended wings of the great nebula through the 28mm eyepiece. I then increased the power to resolve the Trapezium. This compact grouping of stars easily resolved into five distinct and sharp objects — yet another testament to the quality of this scope's optics.

Next, I moved the Mak-Cass to the Pleiades (M45) and reinserted the 28mm. The sky appeared as a dark backdrop, and the cluster's stars were like Tiffany diamonds strewn across a black cloth. I stopped on the bright star Alcyone (Eta [η] Tauri) to see if I could detect any chromatic aberration. None was visible.

The eastern sky was still dark, and Venus, Jupiter, and Mars were well above the horizon. I had planned this observing session so I could watch Jupiter's moon Io emerge from behind the gas giant. The planet's other three large satellites — Europa, Ganymede, and Callisto — were strung out on one side of Jupiter.

Using the 17mm Plössl eyepiece, I watched as Io began to appear. The

PRODUCT INFORMATION

Sky-Watcher USA Maksutov-Cassegrain 127mm

Aperture: 5 inches (127mm)

Focal length: 1,500mm

Focal ratio: f/12

Included: 28mm eyepiece, 2" star diagonal, 6x30 finder scope, 2"-to-1¼" adapter

Price: \$425

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sharp definition provided by the 5-inch Mak-Cass proved itself again. I spotted Io immediately. After just a couple of minutes, I could see dark space between Io and Jupiter easily. At high power, Io and Europa, which were in the field of view, had discernible disks.

The verdict

Sky-Watcher USA's Maksutov-Cassegrain 127mm is a great little scope for a variety of observing desires. Its long focal length provides sharp, color-free images. The 28mm eyepiece is high quality with great eye relief, which allowed me to keep my glasses on. I'll be trying some of the other 2" eyepieces in the Sky-Watcher USA line.

More and more, I find myself reaching for a "grab and go" scope. When presented with a clear sky but limited time, convenience is important. With the Sky-Watcher USA 127mm, I found no compromise in quality. This is a scope for backyard use or on-the-go travel, for casual observing as

well as serious use. Indeed, the sparkle that appeared when I unpacked this scope was just the first hint of the quality design of this superb telescope. ◀



All items pictured — a 2" star diagonal, a 28mm 2" eyepiece, a 6x30 finder scope (and bracket), and a 2"-to-1¼" adapter — come with the Sky-Watcher USA telescope.

